City of New Orleans MMG #6183-CNO

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Executive Summary

Background

Materials Management Group, Inc. (MMG) was contracted by the City of New Orleans Mayor's Office of Coastal and Environmental Affairs to conduct a lead investigation on painted surfaces and in surface soil at Desmare Playground, located at 3456 Esplanade Avenue, New Orleans, LA 70119.

Investigation

The purpose of this investigation was to determine the presence of lead on painted surfaces as well as the lead concentration in surface soil at the playground. Specifically, the scope of services for the investigation included the following:

- Conduct lead-based paint investigation on painted surfaces with an X-Ray Fluorescence Spectrometer (XRF);
- Conduct soil sampling of bare soil areas by LDEQ certified Lead Inspectors or Lead Risk Assessors;
- Collect and analyze surface soil samples in accordance with government published protocols and/or standard procedures;
- Determine the area to be mitigated based on the current USEPA and LDEQ soil standards.

Findings

A total of 43 painted surfaces were tested for lead-based paint. The XRF results indicated that there were no painted surfaces that tested positive for lead-based paint.

A total of 30 soil samples were collected from various locations. The soil lead results ranged from <40 mg/kg (or ppm) to 4,500 mg/kg. After examining the aerial distribution of the sampled soil areas, elevated lead soil areas were limited to the following:

 Bare soil area to the east side of the park's entrance, yard and fence line (240 - 560 mg/kg);

- Bare soil area to the west side of the park's entrance, yard and fence line (95 - 820 mg/kg);
 - Bare soil around the swing set play area (400 4,500 mg/Kg);
 - Bare soil area between the swing sets and play area (510 690 mg/kg);

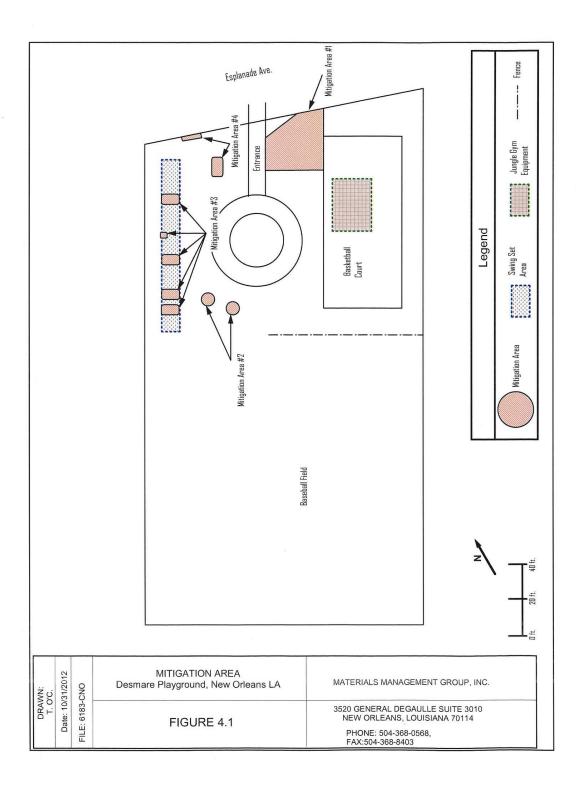
Conclusions and Recommendations

Based on the findings, there are areas in the playground that exhibited soil lead levels exceeding the current USEPA and LDEQ soil lead standard. MMG recommends that mitigation of these areas be made to remove lead hazards that pose a risk to the young children using this playground. The areas to be mitigated are included in Figure 1. The mitigation procedures are included in Table 1 with the estimated costs.

Table 1: Recommended Mitigation Procedures with Estimated Costs

Mitigation Areas	Location	Estimated Area (ft ²)	Mitigation Procedure	Estimated Cost	
#1	Bare soil area east of the park's entrance along fence/in yard	300	 Geotextile fabric cover bare soil area Cover with 3 - 6 inches of low-lead soil Mulch the area 	\$1,000	
#2	Bare soil area west of the park's entrance along fence/in yard	50	Cover with low-lead soil Sod the area	\$200	
#3	Bare soil area between play area and the southwestern swing set	50	Cover with low-lead soil Sod the area	\$200	
#4	Bare soil areas around swing set play area	100	 Remove 3-6 inches of soil Cover the excavated areas with geotextile fabric Cover with 3-6 inches of low-lead soil Cover the soil with sod 	\$2,000	
Estimated Total					

Figure 1: Areas to be Mitigated



1.0 Introduction

The City of New Orleans Mayor's Office of Coastal and Environmental Affairs contracted Materials Management Group, Inc. (MMG) to conduct a lead soil investigation at Desmare Playground. The playground is occupied with in the city block that is bordered by Esplanade Ave. to the northeast, Moss St. to the northwest and southwest, and Grand Rt. St. John to the southeast. Cabrini High School borders the park to the East and residential properties neighbor the park to the west. The physical location of this playground is 3456 Esplanade Av., New Orleans, LA 70119. The location is illustrated below in Figure 1.1.

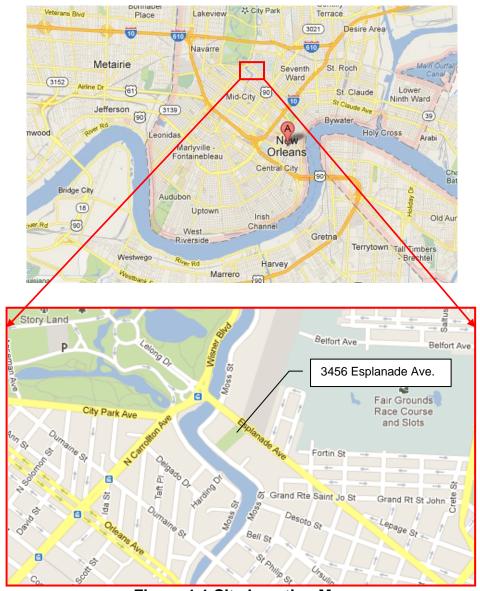


Figure 1.1 Site Location Map

1.1 Description of the Property

Desmare Playground is approximately 185 feet by 360 feet. There is a baseball field located in the southern half of the playground. In the northern half of the playground, there are seating areas, a child play area, basketball court, and a row of swing sets. Please refer to the photographs in Appendix A.

1.2 Scope of Services

The purpose of this investigation was to determine the presence of lead-based paint on painted surfaces as well as the lead concentration in bare surface soil at the playground. Specifically, the scope of services for the investigation included the following:

- Conduct lead-based paint investigation on painted surfaces with an X-Ray Fluorescence Spectrometer (XRF);
- Conduct soil sampling of bare soil areas by LDEQ certified Lead Inspectors or Lead Risk Assessors;
- Collect and analyze surface bare soil samples in accordance with government published protocols and/or standard procedures;
- Determine the area to be mitigated based on the current USEPA and LDEQ soil standards.

1.3 Limitations and Exceptions

The investigation performed by MMG was a "snapshot" of the lead concentrations in bare soil at the time of the investigation. Therefore, sampling efforts at a different time may result in different concentrations. The results and opinions in this report are solely based on the conditions found at the property on the date of the investigation.

2.0 Methodology

2.1 Methodology for Lead-Based Paint (LBP) Investigation

2.1.1 Inspection Procedures

On October 31, 2012, MMG personnel, Mr. Andy J. Davis (LDEQ Lead Inspector #3I180598) conducted a lead-based paint survey using an X-Ray Fluorescence Spectrometer (XRF) - Niton XLP-300A Spectrum Analyzer. He conducted this survey using the procedures dictated by LAC 33:III.2811B. Painted surfaces at the playground were tested for lead-based paint. Different colors of paint were tested (red, yellow, blue, etc.), and different types of substrates (concrete, metal,

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thermoplastic, etc.) were tested to achieve a representative sample of the paints at the playground. Quality control procedures were applied accordingly to documented methodologies and the XRF manufacturer's instruction.

For the purposes of the XRF survey, "Lead-Based Paint" was identified as paint or other surface coatings that contain lead equal to or in excess of 1.0 milligram per square centimeter (mg/cm²). This definition was taken from the Louisiana Administrative Code (LAC), Title 33 (Environmental Quality), Part III (Air), Chapter 28 (Lead-Based Paint Activities), Section 2803 (Definitions). The Niton XLP-300A instrument used to conduct the XRF survey measures in the units of milligrams per square centimeter (mg/cm²). Therefore, the evaluation involved comparing all XRF survey readings directly to the 1.0 mg/cm² regulatory standard for the determination of lead content.

2.1.2 Health and Safety

As required by the U.S. Nuclear Regulatory Commission and the Louisiana Department of Environmental Quality – Radiation Protection Division, all MMG personnel handling the XRF have basic Radiation Safety Training and equipment specific training. A Louisiana State Radiation Material License is required to operate the device. MMG's license number is LA-8076-L01.

2.1.3 XRF Calibration

Before leaving the factory, Niton calibrated the XLP 300A. To further assure the best Quality Assurance/Quality Control, the XLP 300A performs a self-calibration every time the device is turned on. Once the device completes the self-calibration, the sampling technician conducts a calibration check using the Niton supplied NIST Standard Reference Material (001233). This calibration step consists of a series of three checks with lead standard strips. Additional calibration checks are made at the completion of the testing for the day or every four hours, whichever comes first.

2.2 Methodology for Surface Soil Lead Investigation

2.2.1 Surface Soil Sampling Event

On October 31, 2012, the soil sampling was conducted by MMG personnel, Ms. Ashley L. Martinovich and Mr. Andy Davis. Ms. Martinovich is a LDEQ -Certified Lead Inspector and Lead Risk Assessor (Certification #'s: 31183249 and #3R183249, respectively) and Mr. Davis is a LDEQ -Certified Lead Inspector (Certification #31180598).

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2.2.2 Surface Soil Sampling Design

Mr. Davis and Ms. Martinovich identified thirty areas of bare soil around Desmare Playground that were flagged for sample collection. Bare soil inside of the identified areas was collected for representative samples as per HUD requirements. Numbered sample areas and results are specified in Figure 3.1.

2.2.3 Surface Soil Sampling and Analysis

Inside each area where bare soil was identified, surface soil material was collected for analysis. Three to five soil samples from each area were composited as one soil sample representing that area. The soil sampling methodology used is described in the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing Appendix 13.3 – Soil Sampling Protocol for Housing. The quantity of bare soil within each area was also estimated.

Upon collection, all soil samples were sent for lead analysis via Federal Express to EMSL Analytical Laboratory, located at 11931 Industriplex, Suite 100, Baton Rouge, LA 70809. EMSL is an EPA-certified laboratory, accredited nationally by the National Lead Laboratory Accreditation Program (NLLAP), and also by the State of Louisiana through the Louisiana Environmental Laboratory Accreditation Program (LELAP). The laboratory uses EPA method SW846-7420-FLAA to analyze the soil samples.

3.0 Results and Discussion

3.1 Lead-Based Paint Results

A total of 43 painted surfaces were tested for lead-based paint during this investigation. The tested surfaces included playground equipment and constituents of a painted wall, benches, and the entry gate around the child play area. Of all the tested painted surfaces, none of the components tested positive for lead-based paint. The results of the LBP survey are included in Appendix B.

3.2 Lead Soil Results

A total of thirty soil samples were collected. The soil lead results are summarized below in Table 3.1. The soil lead results ranged from <40 mg/kg (or ppm) to 4,500 mg/kg. The results are also shown on the sample location drawing to provide an aerial distribution of lead in soil, as illustrated in Figure 3.1.

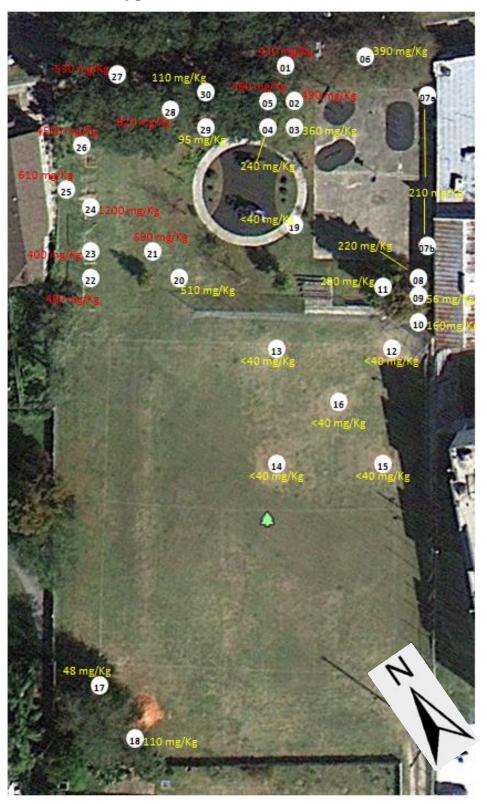
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Table 3.1: Summary of Surface Soil Lead Results

Sample #	Geological Coordinates		Location	Estimated Bare Soil	Lab Results
#	Latitude	Longitude		Area (ft²)	(mg/Kg) [*]
3456-CNO 01	29°58'57.0"	90°05'16.8"	Park Entrance- Left Side, Along Fence	103	430
3456-CNO 02 29°58′56.9" 90°05′16.9"		90°05'16.9"	Park's Entrance – Left Side	86	490
3456-CNO 03 29°58'57.0" 90°05'16.9"		90°05'16.9"	Park's Entrance – Left Side	72	360
3456-CNO 04	29°58'57.0"	90°05'17.1"	Park's Entrance – Left Side	58	240
3456-CNO 05	29°58'57.2"	90°05'17.0"	Park's Entrance – Left Side	94	560
3456-CNO 06	NICHA I ZUSAKAN U I UNSHATA A I		Along Fence Between Basketball Court & Esplanade Ave	200	390
3456-CNO 07	20°58'56 6" 00°05'16 3"		158	210	
3456-CNO 08	29°58'56.0"	90°05'17.0"	Between Basketball Court & Baseball Field	84	220
3456-CNO 09	NO 09 29°58'55.8" 90°05'17.2" Between Basketball Court & Baseball Field		84	160	
3456-CNO 10	CNO 10 29°58'55.8" 90°05'17.3" Between Basketball Court & Baseball Field		Between Basketball Court & Baseball Field	23	56
3456-CNO 11	3456-CNO 11 29°58'56.0" 90°05'17.3" Between Basketball Court		Between Basketball Court & Baseball Field	79	280
3456-CNO 12	456-CNO 12 29°58′55.9" 90°05′17.6" Home Plate of Baseball Field		Home Plate of Baseball Field	396	<40
3456-CNO 13	29°58'56.2"	90°05'18.0"	1 st Base of Baseball Field	96	<40
3456-CNO 14	29°58'55.8"	90°05'18.4"	2 nd Base of Baseball Field	90	<40
3456-CNO 15	29°58'55.3"	90°05'17.8"	3 rd Base of Baseball Field	224	<40
3456-CNO 16	456-CNO 16 29°58'55.8" 90°05'17.8" Pitcher's Mound o		Pitcher's Mound of Baseball Field	113	<40
3456-CNO 17	29°58'55.7"	90°05'20.3"	Trees in Baseball Field's Outfield	72	48
3456-CNO 18	29°58'55.6"	90°05'20.2"	Trees in Baseball Field's Outfield	72	110
3456-CNO 19	29°58'56.7"	90°05'17.4"	Park Bench	5	<40
3456-CNO 20	29°58'57.0"	90°05'18.2"	Yard Between Swing Sets & Play Area	11	510
3456-CNO 21	29°58'57.4"	90°05'18.1"	Yard Between Swing Sets & Play Area	9	690
3456-CNO 22	29°58'57.6"	90°05'18.1"	Swing Set	26	480
3456-CNO 23	29°58'57.4"	90°05'17.9"	Swing Set	26	400
3456-CNO 24	29°58'57.5"	90°05'17.8"	Swing Set	26	1200
3456-CNO 25	29°58'57.7"	90°05'17.9"	Swing Set Support	1	610
3456-CNO 26	29°58'57.7"	90°05'17.8"	Swing Set	9	4500
3456-CNO 27	29°58'57.9"	90°05'17.7"	Along Fence near Swing Set	5	530
3456-CNO 28	29°58'57.6"	90°05'17.3"	Park's Entrance – Right Side	7	820
3456-CNO 29	29°58'57.5"	90°05'17.3"	Park's Entrance – Right Side	78	95
3456-CNO 30	29°58'57.4"	90°05'17.2"	Park's Entrance – Right Side	96	110

^{*}Numbers in bold exceed the current USEPA and LDEQ soil standard of 400 mg/kg.

Figure 3.1 Desmare Playground Lead Concentrations in Bare Soil Areas



3.3 Discussion

The existing EPA Residential Lead Hazard Standards - TSCA Section 403 (http://www.epa.gov/lead/pubs/leadhaz.htm) indicates that lead is considered a hazard when it's "equal to or exceeding 400 parts per million (ppm) of lead in bare soil in children's play areas or 1,200 ppm (or mg/kg) average for bare soil in the rest of the yard." Please note that parts per million (ppm) is equal to milligrams per kilogram (mg/kg).

The soil lead results ranged from <40 mg/kg (or ppm) to 4,500 mg/kg for all collected samples. By examining the aerial distribution of elevated soil areas, the elevated lead soil areas were limited to the following:

- Bare soil area to the east side of the park's entrance, yard and fence line (240 - 560 mg/kg);
- Bare soil area to the west side of the park's entrance, yard and fence line (95 - 820 mg/kg);
- Bare soil around the swing set play area (400 4,500 mg/Kg);
- Bare soil area between the swing sets and play area (510 690 mg/kg);

Please refer to Figure 3.1 for the aerial distribution of lead contaminated soil.

4.0 Conclusions and Recommendations

Based on the findings, there are areas in the playground that exhibited soil lead levels exceeding the current USEPA and LDEQ soil lead standard. MMG recommends that mitigation of these areas be made to remove lead hazards that pose a risk to the young children using this playground. The areas to be mitigated are included in Figure 4.1. The mitigation procedures are included in Table 4.1 with the estimated costs.

Table 4.1: Area to be Mitigated

